DOCUMENT RESUME

ED 177 257 UD 019 816

AUTHOR Gorman, Michael E.; And Others
TITLE The Effects of Previous Success or Failure on a Majority-Minority Confrontation.
PUB DATE [79]
NOTE 35p.

EDRS PRICE MF01/PC02 Plus Postage.
DESCRIPTORS *Conformity; Higher Education; *Majority Attitudes; *Minority Groups; *Social Attitudes; *Social Influences

ABSTRACT

In a series of groups, a four-person majority and a two-person minority were trained separately to adopt different rules for predicting the level of drug use in each of a set of fictitious anthropological societies. On the final training trial, the success or failure of each of these two sub groups at guessing the level of drug use was manipulated to produce a 2 X 2 design in which both majority and minority succeeded one quarter of the time, both failed one quarter of the time, and one succeeded while the other failed half the time. Then both sub groups were brought together and required to predict the level of drug use in two additional cultures. A significant interaction between majority success or failure and the positions adopted by the majority and minority group members after each task was noted. Minority success or failure was found to significantly affect the private responses of individual members, as recorded on questionnaires. It appeared, therefore, that the majority tended to set the pattern for the public debate while the minority exerted its most important influence on the private positions taken by individuals. Implications of these results for several models of social influence were discussed. (Author)

****
* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *
****

SEP 1 1 1979

ED177257

The Effects of Previous Success or Failure on a Majority-Minority Confrontation

Michael E. Gorman

University of New Hampshire

E. Allan Lind

Federal Judicial Center

Daniel C. Williams

University of New Hampshire

U S DEPARTMENT OF HEALTH, EDUCATION & WELFARE NATIONAL INSTITUTE OF EDUCATION

THIS DOCUMENT HAS BEEN REPRODUCED EXACTLY AS RECEIVED FROM THE PERSON OR ORGANIZATION ORIGINATING IT. POINTS OF VIEW OR OPINIONS STATED DO NOT NECESSARILY REPRESENT OFFICIAL NATIONAL INSTITUTE OF EDUCATION POSITION OR POLICY

"PERMISSION TO REPRODUCE THIS MATERIAL HAS BEEN GRANTED BY

M. E. Gorman

TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)."

UD019816

Running head: A Majority-Minority Confrontation

Abstract

In a series of groups, a four-person majority and a two-person minority were trained separately to adopt different rules for predicting the level of drug use in each of a set of fictitious anthropological societies. On the final training trial, the success or failure of each of these two sub-groups at guessing the level of drug use was manipulated to produce a 2 X 2 design in which both majority and minority succeeded one quarter of the time, both failed one-quarter of the time, and one succeeded while the other failed half the time. Then both sub-groups were brought together and required to predict the level of drug use in two additional cultures. A significant interaction between majority success or failure and the positions adopted by the majority and minority group members after each task was noted. Minority success or failure was found to significantly affect the private responses of individual members, as recorded on questionnaires. It appeared, therefore, that the majority tended to set the pattern for the public debate while the minority exerted its most important influence on the private positions taken by individuals. Implications of these results for several models of social influence were discussed.

The Effects of Previous Success or Failure on a Majority-Minority Confrontation

Research on conformity and related topics has a long history in social psychology, dating back to F. H. Allport's (1924) work on social facilitation and some of the early experiments on suggestion (Moore, 1921, Wheeler and Jordan, 1929). Of even more interest to modern social psychologists is Muzafer Sherif's work on social norms (1935, 1936, 1937). Using the autokinetic effect as an ambiguous stimulus, Sherif found that subjects, when viewing the effect in small groups, influenced each other's judgements as to the amount the stimulus-light actually moved. Sherif postulated that these individuals, through mutual interaction, gradually arrived at a social norm to govern their behavior in this ambiguous situation. When he retested some subjects individually, he found that they retained their socially-established range of judgements even in the absence of any kind of group pressure. In a later (1937) study, Sherif had his subjects view the autokinetic effect in the presence of a confederate whose judgements fell into a predetermined range; subjects tended to adopt the confederate's range.

Sherif and his students continued to do research using the autokinetic effect through the 1940s and into the 1950s (Sherif & Sherif, 1956). More recently, Jacobs and Campbell (1961) used the effect to test the process of cultural transmission of social norms in the laboratory. A naive subject was placed in a room with several confederates

who adhered consistently to an arbitrary range in an effort to influence him. Then, after a norm had been established in this manner, the confederates were removed one-by-one and naive subjects added as replacements. The idea was to represent passage of cultural traditions across generations; the addition of each novel subject represented a "new generation" that had to be inculcated with the culture's values. Jacobs and Campbell found that "significant remnants of the culture persisted for four or five generations beyond the last confederate. Gradually in each of the 12 experimental groups the arbitrary norm decayed and the group judgments drifted away from it back to the natural norm found in the control groups" (1961, p. 657). The authors were surprised by the rapidity with which innovation occurred, obviating the effect of the induced cultural norm. They attributed the rapid decline in its effect to the fact that it was an arbitrary, functionless norm, with no powerful social sanctions to support it.

Using a different task, Solomon Asch (1956) conducted what is probably the classic demonstration of conformity. He had a group of confederates judge the comparative lengths of a set of lines in a way that contradicted the perception of a naive subject placed in the same situation. If there were at least three confederates and they coincided unanimously in their inaccurate judgements, the naive subjects agreed with them about one-third of the time--even though a control group was able to make the correct discrimination easily. Judgements were made publicly, with the naive subject responding after most of the others.

But, no matter how large the majority, the introduction of another naive subject who disagreed with the majority's opinion greatly reduced conformity. Also, the more difficult the comparative discrimination, the more individuals tended to go along with the majority.

In his account of these experiments, Asch stressed the surprising range of individual differences he encountered in this situation. In long, careful interviews of the subjects conducted after the experimental manipulation, Asch found that almost all experienced great internal conflict, but that each found a different way of dealing with it. Among those who yielded, most did so only out of fear of the group's disapproval, but there were even a few who apparently thought that the majority's position was really correct. While his experiments are often interpreted as classic examples of conformity, Asch was most impressed by the fact that most individuals disagreed with the majority on all but a few trials (Asch, 1956, p. 3).

Crutchfield (1955) modified the Asch paradigm so as to be able to test greater numbers of subjects more efficiently. He used no confederates; instead, he placed his groups of subjects in separate booths, presented the stimuli they were to judge on a screen before them and manipulated the situation such that each subject thought that the rest of the group was unanimously making an incorrect choice. Conformity in the Crutchfield situation was generally lower than in Asch's face-to-face experiments and varied with the anonymity of the subject's

responses. When individuals, after hearing the faked responses of the rest of the group, were asked to announce their own reaction via a microphone, conformity was greater than when subjects could record their responses by pressing a key, or simply writing it down on a piece of paper. Therefore, in Crutchfield's studies, subjects conformed more when they responded publicly than when their responses were made in private.

Recently, Moscovici (1972, 1974) has incorporated both the classic approaches of Sherif and Asch into a larger model of social influence. He classifies Sherif's earliest autokinetic studies as an example of a process he calls normalization, in that they demonstrate the way in which individuals will compromise to form a norm when there is no clear-cut external referent for their judgments. Unlike Asch's experiment, in the Sherif situation there is no majority with a consistent standard to which subjects must react; instead, individuals, when brought together as a group to view the light, must grope together towards a norm. Their consensus represents the avoidance of conflict. In Asch's conformity situation, however, there is a conflict that must be resolved; mutual consensus is impossible, in that the majority will not compromise with the minority of one. In normalization, members of a group move towards a mutually satisfactory position; in conformity, any movement is unidirectional, and must be towards the majority position.

Moscovici fills out his social influence model by proposing two logical opposites to normalization and conformity; they are polarization and innovation, respectively. Innovation is Moscovici's most important

novel contribution. He points out that the problem with most research in the area of social influence is that the way in which a small minority can influence a much larger majority has been ignored. Clearly, as Campbell (1961) has also implied, if conformity were the primary force operating in social evolution, history would show less evidence of powerful changes and revolutions—because conformity would insure a fairly rigid maintenance of existing traditions. In fact, Moscovici assigns a key role to small, radical minorities in creating major scientific and political innovations.

A major factor in determining minority influence, according to Moscovici, is behavioral style. If a small group of individuals holds a particular viewpoint consistently and unanimously, it will be able to affect a much larger group. Interestingly, Moscovici cites Asch's results as an example of this. In a sense, Asch's majority is really a minority, in that it consistently maintains a point of view diametrically opposed to the perceptions of most individuals. Moscovici sees unanimity as the key to the "majority" influence in Asch's study; as variations on Asch's original design showed, when even one other naive subject who disagreed with the confederates was introduced, conformity was greatly reduced.

Moscovici has done a number of studies to support his contentions. In one series of experiments, he presented subjects with a series of figures and asked them to pick which of four dimensions of a given figure seemed most important to them. The dimensions were size, shape, color and line; the task was presented as being relevant to the types of visual discriminations made by airport controllers. A single confederate was

placed with each group of subjects; on every trial, this individual picked color as the key dimension, even though there was no objective reason to assign special significance to color. In the presence of this persistent minority member, subjects selected color as the key dimension more often than a control group (Moscovici and Faucheux, 1972). Moscovici concluded that this result was a clear demonstration of the effect of innovation.

In another experimental series, a group of six was asked to judge the color of a series of slides; in fact, all the slides were varying shades of blue. But, on every trial, two confederates declared that the slides were green--as in the Asch experiment, defying objective judgment. This consistent minority had a noticeable effect on the majority's responses. Further, Moscovici retested some of the subjects who had previously been subjected to this minority influence on a series of slides whose colors ranged from a clear blue to a clear green, covering a wide range of shades between. Subjects tended to make errors in the direction of calling blue slides green on this post-test; it appears that the minority had a lasting effect on group members (Moscovici and Faucheux, 1972).

Finally, Moscovici suggests a fourth aspect of his social influence model--polarization, which occurs when the difference between majority and minority views is too great. Instead of compromising, as in the normalizatior situation, the two opposing factions may adopt even more extreme stances (Moscovici & Faucheux, 1972). Actually, Moscovici and other social psychologists also have used the term polarization in a somewhat different context to refer to the risky-shift phenomenon (e.g. Moscovici & Doise,

1974). To avoid confusion, the term bipolarization will be substituted for polarization in the present account and will be used to refer specifically to those situations in which a conflict between the majority and the minority results in both sides adopting an even more extreme, less compromising point of view.

The importance of Moscovici's model lies simply in the fact that it represents a broad range of possible outcomes of a confrontation between a majority and a minority. Historically, social psychologists have shown a tendency to focus their research on conformity, almost to the exclusion of other, equally important social influence processes. There are exceptions, of course: Sherif (1936) studied what Moscovici would call normalization, Milgram (1956) concerned himself with obedience, and other examples of a similar nature can be found. But such important reviews of the literature on conformity and related topics as those of Nord (1969) and Allen (1975) bear witness to the sheer volume of studies that have been done solely on conformity. Even Hollander and Willis (1968) who criticize the limitations of conformity research still fail to discuss the possibility of such alternate modes of influence as innovation and bipolarization. Moscovici has provided a model of social influence that goes beyond the simplistic dichotomy between conformity and nonconformity on which most of the literature seems focused. It is therefore essential that his approach be explored experimentally.

For the purposes of the present study, a set of hypotheses were derived, based on Moscovici's theoretical perspective. It was predicted that in those situations where the majority defended its position with

greater consistency and determination than the minority, the majority's influence would prevail and conformity would occur; conversely, when the minority argued its point of view with greater consistency and unanimity, its influence would prevail and lead to innovation. If both sub-groups argued with equal consistency, they would bipolarize to more extreme stances; if both displayed uncertainty, compromise and normalization would result.

To test these hypotheses, it was decided to create a situation in which a majority and a minority would be trained separately in conflicting rules on a problem-solving task, then brought together to solve a similar task jointly--setting up an obvious conflict. Hammond et al. (1968) provided a classic example of a politically-oriented task used to set up a cognitive conflict between members of a group. For the present study, a similar task was used, but was couched in terms of a scientific, rather than a political, debate. To vary the relative consistencies with which the majority and the minority would defend their positions, their success and failure on the final training trial was manipulated. There is a long literature which suggests that previous success and failure have an important effect on social influence processes (e.g., Wiesenthal, Endler, Coward & Edwards, 1976; Endler, 1966; Endler & Hoy, 1967). Whether this effect is mediated by a similar effect on consistency of sub-group style is by no means clear; however, as Moscovici himself supplies little information concerning the factors which influence consistency, it does not seem unreasonable to begin by positing previous success or failure

as likely possibilities.

Finally, it was decided to obtain indicators of both public and private conformity, as there are numerous examples in the literature of significant differences between the public and private responses given by subjects (Crutchfield, 1955; Mugny, Humbert & Zubel, 1973; Nosanchuk & Lightstone, 1974). In addition, a single naive subject was introduced in the final task sessions to assess the persuasive effect of the majority and minority on an individual who did not share any of the biases they acquired as a result of training.

Methods

Subjects

Three hundred and one undergraduate students at the University of New Hampshire participated in this study in partial fulfillment of a course requirement for introductory psychology. They were run in groups of seven, with sexes balanced as equally as possible within and across groups. Three groups were discarded prior to data analysis due to procedural errors, leaving a total of forty groups.

Procedures

Seven subjects entered the main experimental room and were seated in a semi-circle facing the experimenter, who read them a set of instructions. The subjects were told that the study was concerned with their ability to predict the level of drug use in a society or culture using information about the social rigidity and the importance of religion in the culture. In the instructions, the conflict between these two dimensions was couched

in terms of a debate between anthropologists:

> Some anthropologists have suggested that cultures and societies that have very rigid social structures tend to show high drug use, since drugs can ease the burdens of such social structures. Other anthropologists disagree, suggesting that the key to drug use is the extent to which a culture stresses religious expression. These anthropologists argue that a heavy emphasis on religion leads to low drug use, since religion can serve some of the purposes for which people would otherwise turn to drugs. Although most anthropologists agree that one of these two factors is a major influence in cultural use of drugs, there is little agreement on which factor is the really important one.

Graphs were included to indicate the direction of the relationships predicted by the two factors in such a way that the subjects could perceive them clearly. To convince subjects that there was a "right" answer, it was indicated that a series of computer studies had been done which showed that one of the two dimensions was a consistently better predictor of drug use than the other. Of course, the subjects were not told which factor had proved more reliable.

Finally, the subjects were told that they would be split up into groups of varying sizes and given experience making predictions about the use of drugs in various cultures, using information on social rigidity and amount of religion in each of these cultures. Then they were told that all would be reunited into a single group to make some final predictions about the use of drugs in various cultures, using information on

social rigidity and amount of religion in each of these cultures. Upon completion of the instructions, the seven subjects were separated into three sub-groups: a four person "majority," a two person "minority," and a single individual. Equal numbers of males and females were placed in the majority and minority conditions, while the sex of the remaining subject was alternated. All sub-groups were kept in separate rooms. Only the group of four--the majority--and the group of two-the minority--received any kind of training before the final full group session. The seventh subject was told that he or she had deliberately been placed in a no-experience condition and would rejoin the rest of the group in about twenty minutes.

For the purposes of this study, it was necessary to create a task that would allow the majority and minority sub-groups to be trained to adopt different perspectives on the same problem-solving situation. A series of short, two-paragraph descriptions of fictional cultures were developed to achieve this purpose. In each case, social rigidity and emphasis on religion were stressed equally within each culture, i.e. either both dimensions were "high" in a given culture, or both were low. Naturally, this meant that for each culture, the two rules stressed in the instructions were in conflict, and would lead to opposite predictions.

Two separate sequences of five similar tasks were developed, one to be used by the majority and one by the minority in the training sessions.

Each of the two sub-groups was trained to base its predictions on one of the two dimensions, either social rigidity or emphasis on religion. Pilot research was done to insure the feasibility of this procedure, given the nature of the tasks and the rules the subjects had to learn. The particular task sequence and rule the majority and the minority had to learn was alternated randomly across replications of the procedure.

There were five training trials in all for both the majority and the minority. On the first four, each sub-group was manipulated to follow its rule by marking only those responses correct which agreed with the level of drug use that would be predicted by that rule. For example, one of the culture descriptions dealt with the fictional "Zoacatl Indians of southwestern Mexico," who were said to have both a very rigid social structure and a heavy emphasis on religion; these two aspects were embellished and elaborated in separate paragraphs in the description so as to engender a believable context. A sub-group facing this task would be asked to mark their prediction concerning the level of drug use among the "Zoacatls" on a separate feedback form that allowed them to choose between four levels: moderately or very frequent and moderately or very infrequent. If the experimenter intended for this particular sub-group to adopt the rigidity rule, (s)he would mark as correct only a "moderately or very frequent" answer, and would read the subjects a brief feedback statement that accorded with that prediction. At the same time, the other sub-group would be working on a similar task in another room, but would be corrected and given feedback in accordance with the other rule.

After three such trials, the majority and minority were given additional "information," which served to stress and reinforce the rule each was learning. This "information" tied each of the rules to a different, fictitious anthropological theorist and included a rationale for each of the rules: social rigidity was said to lead to higher drug use "primarily because drugs allow individuals to escape at least momentarily from the inflexible demands of their cultures," and religion was said to lower drug use "primarily because religion provided an outlet for those pressures that would normally drive people to drugs." Each sub-group received the rationale for its rule only.

The fourth trial then proceeded in the same manner as the first three. After it, all subjects were given a questionnaire which asked them to indicate which of the two factors they thought was the most important influence on the use of drugs, and to rate how certain they were of the importance of this factor on a nine-point scale. This questionnaire served as a check on how well the majority and minority had learned their rules, and recorded the belief of the additional subject who received no training.

On the fifth and final training trial, the majority and minority were given typical tasks, but their success or failure at guessing the level of drug use was manipulated by the experimenter who marked their response correct or incorrect based on a chart of random permutations. The result was a 2x2 design, in which both the majority and minority succeeded on the last task one-quarter of the time, both failed one-quarter

of the time, and half the time one succeeded while the other failed. This final manipulation was intended to affect the determination and consistency with which the sub-groups defended their rules when they were re-introduced to the full group situation.

The next step was to bring all subjects together again, in the original experimental chamber. At this point, additional instructions were read, which included an admission that the majority and minority had received different information—but not different feedback—on the training trials. Subjects were also told that they would have only two tasks to debate in the full group situation, that they would be given fifteen minutes for each of these, and that no feedback on either would be given to them until both were completed. These two, final tasks were simply longer, more complicated versions of the earlier kinds of tasks faced by the majority and the minority; on both, the levels of religion and rigidity were high, leading to opposite predictions for the two rules and creating an obvious conflict situation. Subjects were urged to reach a consensus on each of these final cultures, but were told that they could take a vote if a consensus was impossible. They recorded their responses on a feedback form that gave them four levels of choice, in terms of drug use: very infrequent, moderately infrequent, moderately frequent and very frequent. Space was provided for anonymous recording of individual members' votes, if a consensus could not be reached.

After both tasks were completed, a second questionnaire was administered that again asked subjects which rule they preferred and how

certain they were of that rule. In addition, subjects were asked to what extent they agreed with the overall group predictions and whether they would like to participate in a future experiment with the same group. All questions except the one concerning rule preference, which was an either-or choice, were put on a nine-point rating scale. After the questionnaires were collected, subjects were thoroughly debriefed and thanked for their participation.

Overview of the Design

Because of the importance of the interaction between subjects in the final, full group condition and because groups of subjects were randomly assigned to experimental conditions, it was decided to treat the group as a unit of analysis for all tests done on the public votes taken at the end of the full group session. Scores were averaged across sub-groups and individual subjects within each group to arrive at a set of overall indicators that would describe each group's reaction to the decision task. The result was a 2 X 2 X (3 X 2) design, with 2 (majority success/failure) X 2 (minority success/failure) between group factors and 3 (sub-group membership of each subject) X 2 (first or second full-group task) within-group factors. An average of ten groups were run in each of the four between-group cells.

Results

The Public Vote

Subjects' public responses were coded on a four-point scale, where four always represented maximum conformity to the majority position. A

grand mean test was conducted to determine whether the average voting positions taken by the majority and the minority differed significantly across the two tasks; they did, $F(1, 36) = 23.382$, $p < .001$. Inspection of the majority means for task 1 ($M = 2.925$) and task 2 ($M = 2.731$) and the minority means for tasks 1 ($M = 2.375$) and 2 ($M = 2.213$) indicates that this difference remained fairly constant across both tasks. Apparently, neither sub-group was willing to compromise with the other's position beyond a certain point. Further evidence for this idea comes from the fact that the grand mean for all public votes ($M = 2.561$) lies squarely between the majority and minority positions. No significant differences in the seventh, untrained subjects' mean votes on task 1 ($M = 2.575$) and task 2 ($M = 2.550$) were noted.

To determine the effects of the success-failure manipulation on the groups' responses, a series of two-way univariate analyses of variance were conducted. A significant Majority Success-Failure X Difference Between Majority and Minority X Task interaction was found, $F(1, 36) = 4.991$, $p < .03$. Inspection of the means (see Figure 1) indicates that the difference between the majority and the minority positions is greatest on the first task when the majority succeeds and on the second when it fails, and, conversely, this difference is smallest on the second task when the majority succeeds and on the first when it fails. To make

---

Insert Figure 1 about here

---

certain that the order in which the two full group tasks were presented

did not affect this interaction, the effect of task order on the difference between majority and minority positions was partialed-out and tested separately; it was marginally significant, $F(1, 36) = 5.521$, $p < .05$. However, partialing-out this task-order effect served only to increase the significance of the Majority Success-Failure X Difference Between Majority and Minority X Task interaction, $F(1, 36) = 7.414$, $p < .025$. No other significant effects were found.

Therefore, the prediction that each sub-group's previous success or failure would affect its pattern of voting was confirmed only for the majority: minority success or failure had no effect on the public vote. Even in the majority's case, the predicted pattern was confirmed only on the first task, where the majority adhered more firmly to its rule when it had just succeeded ($M = 3.119$) than when it had just failed ($M = 2.711$). On the second task, this pattern was exactly reversed, with the majority adhering less firmly to its rule when it had succeeded ($M = 2.619$) than when it had failed ($M = 2.855$). But the fact that both the majority and minority responded in a manner consistent with their rules indicates the success of the training trials in establishing a strong difference of opinion on the final group task.

The Private Questionnaire Responses

Subjects choice of rule and their rating, on a nine-point scale, as to how certain they were of that choice were drawn from the questionnaires and transformed so that positive scores represented conformity to the majority rule and negative scores represented conformity to the minority rule. A grand mean test indicated that there was a significant

difference between the overall means for the majority and the minority on questionnaire 1, $F(1, 34) = 214.69$, $p < .001$. This finding demonstrates that subjects accepted the different rules in the majority and minority conditions and responded privately in accordance with them. A further grand mean test showed that the majority and minority positions were significantly closer together on the second questionnaire, $F(1, 34) = 12.0129$, $p < .01$. Inspection of the means for the majority on questionnaires 1 ($M = 5.539$) and 2 ($M = 4.184$) and the minority on questionnaires 1 ($M = -4.013$) and 2 ($M = -3.079$) demonstrates this tendency for subgroup members' private opinions to converge after the full group interaction. Specifically, the majority and minority means are closer together on the second task than on the first task. The seventh, untrained subject's opinions on questionnaires 1 ($M = .316$) and 2 ($M = -1.369$) did not differ significantly from majority and minority positions.

A series of two-way univariate analyses of variance were done on the private questionnaire responses, to assess the effects of the success-failure manipulation. The interaction between the success or failure of the minority and the change in the majority and minority responses across questionnaires was significant, $F(1, 34) = 6.971$, $p < .01$. When the minority succeeded, there was little change in responses from the first to the second questionnaire; when the minority failed, however, both majority and minority responses on the second questionnaire shifted markedly towards a middle position. No other effects were significant.

Insert Figure 2 about here

The results indicate that the success or failure of the majority determined the pattern of public responses, while minority success or failure determined the pattern of private responses. In both cases, it was the difference between the majority and minority positions that was directly affected by the success-failure manipulation. When the majority succeeded, the difference between the public positions taken by the subgroups was larger on the first task than on the second; when the majority failed, this difference was smaller on the first task than on the second. When the minority succeeded, the difference between the private positions taken by members of the majority and minority remained constant across questionnaires; when the minority failed, this difference was considerably smaller on the second questionnaire than on the first.

Discussion

The results have important implications for at least three major questions: 1. What happens when a majority and a minority who have been previously trained to adopt opposing points of view confront each other on a problem-solving task? 2. How does their previous success or failure during training affect this confrontation? 3. What is the relationship between their public and private responses to this situation? It was hoped that answers to a fourth question would emerge as well, i.e. what stance would a naive, untrained individual introduced into this situation adopt? Unfortunately, the results provide little clear information on this last question, although even discussion of the first three questions must remain highly speculative at this point.

Consideration of the first question requires discussion of the

patterns indicated by the overall means, collapsing across the cells of the success-failure manipulation. On the public vote, the confrontation between the majority and the minority ended in a stand-off, with neither sub-group showing a willingness to desert its rule completely and adopt the other's position, as the significance of the test of the difference between the majority and minority means demonstrates. What this finding suggests is that, in certain situations, a majority and a minority may influence each other equally, i.e. neither conformity nor innovation will necessarily occur as a result of a majority-minority confrontation. Perhaps the aspect of Moscovici's model that comes closest to describing this result is normalization, since the difference in the majority and minority positions on the overall vote is hardly as dramatic as the differences in the rules learned in training would suggest it should have been, implying a tendency towards compromise on the part of both sub-groups during the full group interaction.

On the private questionnaire responses, collapsing across cells definitely reveals a normalization pattern, since the majority and minority means for questionnaire two are significantly closer than for questionnaire one, indicating that an overall convergence of opinions occurred. Therefore, while the two sub-groups remained at somewhat of a stand-off publicly, privately they showed a strong tendency to compromise.

Consideration of the second question involves a discussion of the effects of the success-failure manipulation on the public vote. It was predicted that when both the majority and the minority succeeded, bi-polarization would occur; when both failed, normalization would result; when the majority alone succeeded, the minority would conform; and when

only the minority succeeded, innovation would occur. Results certainly did not verify these predictions. In fact, only the success or failure of the majority had any significant effect on the pattern of public voting. On the first task, the majority mean was higher when the majority succeeded than when it failed, which is in accord with the predicted directions; however, on the second task, even this relationship reversed itself (see Figure 1). Furthermore, the minority showed no increased tendency to conform to the majority position when the majority succeeded, nor any tendency to move in an innovative direction when the majority had just failed.

Perhaps a more powerful success-failure manipulation would have produced the predicted pattern. As it was, the effects of previous success and failure were more subtle and took on a different form than had been expected. In particular, the majority's previous experience was the key determinant of the pattern of public response, while the minority's previous experience was the most important factor in determining the pattern of private responses. Also, sub-group responses shifted significantly across tasks. Some tentative explanations for these public and private effects will be attempted.

In terms of the public votes and interaction, it can be argued that the success or failure of the majority is of primary importance in determining the group norm, or set. When the majority has succeeded during training, it may enter the group with what Thibaut and Strickland (1957) call a "task set," i.e. an orientation towards resolving the factual conflict between its rule and the minority's. The fact that the

majority has just succeeded makes its members more determined to defend their position, or rule; the minority members pick up this task orientation from the majority and, far from "giving in," they respond by adhering even more firmly to the rule they learned in training.

When the majority has just failed, however, its members are less certain of their position and are therefore more inclined to reach some form of compromise with the minority. The result is a "group set" (Thibaut & Strickland, 1957) in which both sub-groups become more oriented towards reaching a mutual agreement than defending their rules. In an experiment, Thibaut and Strickland (1957) established that, as the pressure to conform was increased within a group, there would be more conformity in a group set and less in a task set. It could be argued, therefore, that two sub-groups with opposing views would tend to bi-polarize in a task set and normalize in a group set. This idea corresponds to the difference between the majority success and failure conditions on the first task in the present study: when the majority succeeds a task set could be causing the two sub-groups to compromise less than when the majority fails and a group set is operating.

On the second task, this pattern is exactly reversed, i.e. in the majority success condition, the difference between the majority and minority positions decreases, while in the majority fail condition, it increases. Therefore, if the group adopts a task orientation on the first trial, it shifts to a group set, and vice-versa. This effect may be explained by the fact that the individuals in the group feel they have dual obligations, to the rules they have

learned and to the other members of the group. If, on the first trial, the group fulfills its obligations to the task by responding in accordance with the rules learned in training, then on the second trial group members feel they ought to regain some sense of group solidarity by moving towards a compromise position. Conversely, if on the first trial the primary concern of individuals in the group has been to make concessions to one another, then on the second trial, they feel obligated to place more emphasis on the rules they learned in training. In sum, then, the question of how the previous success or failure of the majority and the minority affects their confrontation can be addressed tentatively by arguing that, in this situation, it is the success or failure of the majority that determines the initial set of the group but that group members feel they must resolve conflicting obligations by shifting to the opposite set on the second task.

To test some of the hypotheses outlined above, future studies might concentrate on manipulating a majority and a minority to emphasize either the task on which they are working or their relationships with other group members. If the problem-solving aspects of a situation were stressed, perhaps by offering rewards for correct solutions, one would expect sub-group members to adhere firmly to the rules they learned in training, even across several full-group tasks. Conversely, emphasizing group solidarity, perhaps by leading individuals to believe that they were participating in a long-term group that would meet a number of times, should induce sub-group members to move towards compromises over a series of tasks. In the present study, the fact that neither the task nor the

group orientations received a particularly heavy emphasis may account for the reversal of the initial group sets on the second task.

To answer the third question, concerning the relationship between the public and private responses of a majority and a minority in a conflict situation, the questionnaire results must be considered. As noted previously in this section, overall private responses showed a tendency for convergence of the majority and minority positions that is not reflected in the public responses. It appears, therefore, that while, on the average, sub-groups defended their rules publicly, privately their individual members showed a greater tendency to be influenced by the other sub-group's arguments.

Furthermore, a highly significant interaction between the success or failure of the minority and the change in the majority and minority responses across questionnaires was noted. When the minority succeeded, there was little change in responses from the first to the second questionnaire; when the minority failed, however, both majority and minority responses on the second questionnaire shifted dramatically towards a middle position (see Figure 2). That the minority, when it has failed in its last training trial, should move privately towards the majority position is perhaps not so surprising; what is surprising is that the majority in this case makes a corresponding shift towards the minority position. A tentative explanation for this effect must be offered.

It is possible that when the minority fails, its members adopt what Moscovici (1976) would call a "fairer" style of argument. He makes

a distinction between "fairness" and "rigidity" as behavioral styles that can be used in a debate. To be "fair," in this sense, is to show a concern for taking into account the positions of the other persons in the debate, even while arguing strongly for one's own. "Fairness means exactly this: simultaneous expression of a particular viewpoint, and concern for the mutuality of the relationship in which views are expressed" (Moscovici, 1976, p. 141). He cites a study by Mugny, Humbert and Zubel (1973) in which a minority was much more effective at influencing a majority when it adopted a "fair" style, as opposed to a rigid, uncompromising one. It could be argued that when the minority fails, it shows a greater willingness to take the majority's position into account in its arguments, and therefore is able to exert a certain amount of private influence on the majority.

The minority's public focus is on sub-group unity, on giving up only as much to the majority position as the majority gives up to theirs. Privately, however, the minority makes significantly more concessions to the majority rule when it has failed than when it has just succeeded; at the same time, its members adopt a fairer style of argument after failure, and are therefore able to win private concessions from the majority. Worschel, Lind and Kaufman (1975) also found important differences in the public and private responses of groups in competition. They concluded that the public responses were being used as a means of within-group communication, to maintain motivation and commitment. Private responses, on the other hand, more closely reflected the true opinions of individual members. Similarly, in the present study, the minority members appear

to be preserving their sub-group unity and commitment with their public responses, while making concessions and exerting influence privately.

Unfortunately, the responses of the seventh, untrained subject did not fall into a clear, definable pattern in the present study. It is likely that the two sub-groups in this situation were more concerned with influencing each other than the naive individual. Increasing the motivation of the majority and the minority to persuade this untrained individual might be brought about by announcing that there would be some form of award for correct full-group answers, or by placing even more emphasis on the necessity for a unanimous concensus on the group tasks.

Interestingly, what the overall pattern of results suggests is that in a situation where a majority confronts a minority, it is possible for the majority to exert its greatest influence publicly while at the same time responding privately to the minority's influence. Eventually, if these private changes are strong enough, they may become public--perhaps on a third group task in the present study, the majority might have begun to show some public shifts in accordance with the minority success or failure. Conversely, this experiment shows that it is possible for the minority to allow the majority to set the tone for public votes and debates without allowing this set to significantly affect its private beliefs. Analogies can be drawn to such real-world phenomena as political processes, where a vote taken on the floor of a senate or parliament certainly does not always represent the private beliefs of its members, especially if voting is maintained along party lines. In the latter case, the public struggle between majority and minority parties

may bear little resemblance to the private bargaining and changes of opinions that take place among the individual members.

References

Allen, V. L. Social support for nonconformity. In Leonard Berkowitz (Ed.) Advances in experimental social psychology (Vol. 8). New York: Academic Press, 1975.

Allport, F. H. Social psychology. Cambridge, MA: Houghton Mifflin, 1924.

Asch, S. E. Studies of independence and conformity. A minority of one against a unanimous majority. Psychological Monographs, 1956, 70 (9, Whole No. 416).

Crutchfield, R. S. Conformity and character. American Psychologist, 1955, 10, 191-198.

Endler, N. S. Conformity as a function of different reinforcement schedules. Journal of Personality and Social Psychology, 1966, 4, 175-180.

Endler, N. S. & Hoy, E. Conformity as related to reinforcement and social pressure. Journal of Personality and Social Psychology, 1967, 1, 197-202.

Hammond, K. R., Bonauto, G. B., Faucheux, C., Moscovici, S., Frohlich, W. D., Joyce, R. & Di Majo, G. A comparison of cognitive conflict between persons in Western Europe and the United States. International Journal of Psychology, 1968, 3, 1-12.

Hollander, E. P. & Willis, R. H. Some current issues in the psychology of conformity and nonconformity. Psychological Bulletin, 1967, 68, 62-76.

Jacobs, R. C. & Campbell, D. T. The perpetuation of an arbitrary tradition through several generations of a laboratory microculture. Journal of Abnormal and Social Psychology, 1961, 63, 649-658.

Milgram, S. Some conditions of obedience and disobedience to authority. Human Relations, 1956, 18, 57-75.

Moore, H. T. The comparative influence of majority and expert opinion. American Journal of Psychology, 1921, 32, 16-20.

Moscovici, S. Social influence : Conformity and social control. In Charlan Nemeth (Ed.) Social psychology: Classic and contemporary integrations. Chicago: Rand McNally, 1974.

Moscovici, S. Social influence and social change. London: Academic Press, 1976.

Moscovici, S. & Doise, W. Decision making in groups. In Charlan Nemeth (Ed.). Social psychology: Classic and contemporary integrations. Chicago: Rand McNally, 1974.

Moscovici, S. & Faucheux, C. Social influence, conformity, bias, and the study of active minorities. In L. Berkowitz (Ed.). Advances in experimental social psychology. New York: Academic Press, 1972.

Moscovici, S. & Nemeth, C. Social influence II: Minority influence. In C. Nemeth (Ed.). Social psychology. Classic and contemporary integrations. Chicago: Rand McNally, 1974.

Mugny, G., Humbert, B. & Zubel, R. Le style d'interaction comme facteur de l'influence sociale. Bulletin de Psychologie, 1973, 26, 789-793.

Nord, W. R. Social exchange theory: An integrative approach to social conformity. Psychological Bulletin, 1969, 71, 174-208.

Nosanchuk, T. A. & Lightstone, J. Canned laughter and public and private conformity. Journal of Personality and Social Psychology, 1974, 29, 153-156.

Sherif, M. A study of some social factors in perception. Archives of Psychology, 1935, 27

Sherif, M. An experimental approach to the study of attitudes. Sociometry, 1937, 1, 90-98.

Sherif, M. The psychology of social norms. New York: Harper & Bros., 1936.

Thibaut, J. & Strickland, L. H. Psychological set and social conformity. Journal of Personality, 1956, 25, 115-129.

Wheelev, D. & Jordan, H. Change of individual opinion to accord with group opinion. Journal of Abnormal and Social Psychology, 1929, 24, 203-206.

Wiesenthal, D. L., Endler, N. S., Coward, T. R. & Edwards, J. Reversibility of relative competence as a determinant of conformity across different perceptual tasks. Representative Research in Social Psychology, 1976, 7, 35-43.

Worschel, S., Lind, A. & Kaufman, K. Evaluation of group products as a function of expectations of group longevity, outcome of competition and publicity of evaluations. Journal of Personality and Social Psychology, 1975, 31, 1089-1097.

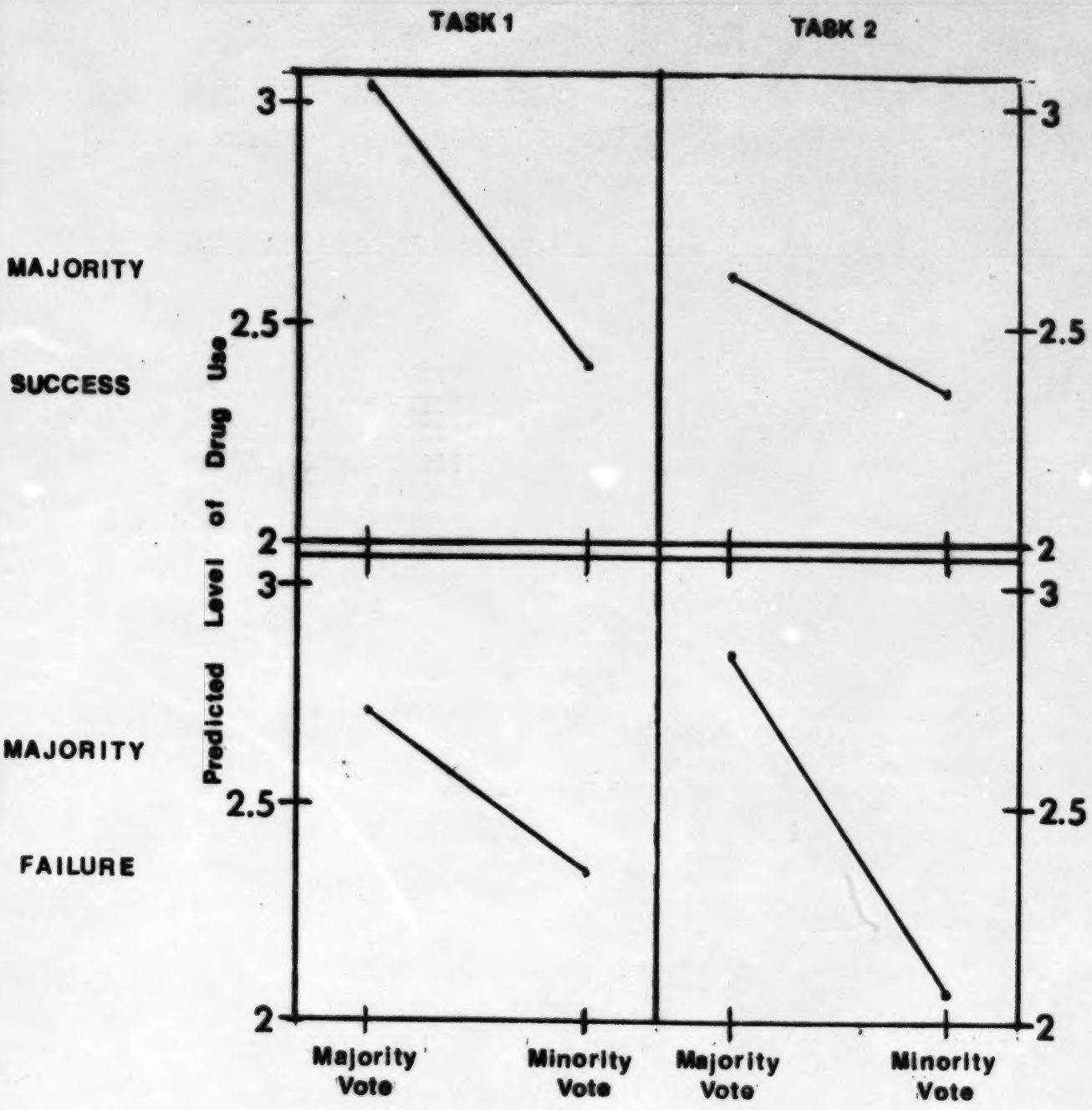

Figure 1. Difference between public votes of majority and minority on Tasks 1 and 2.

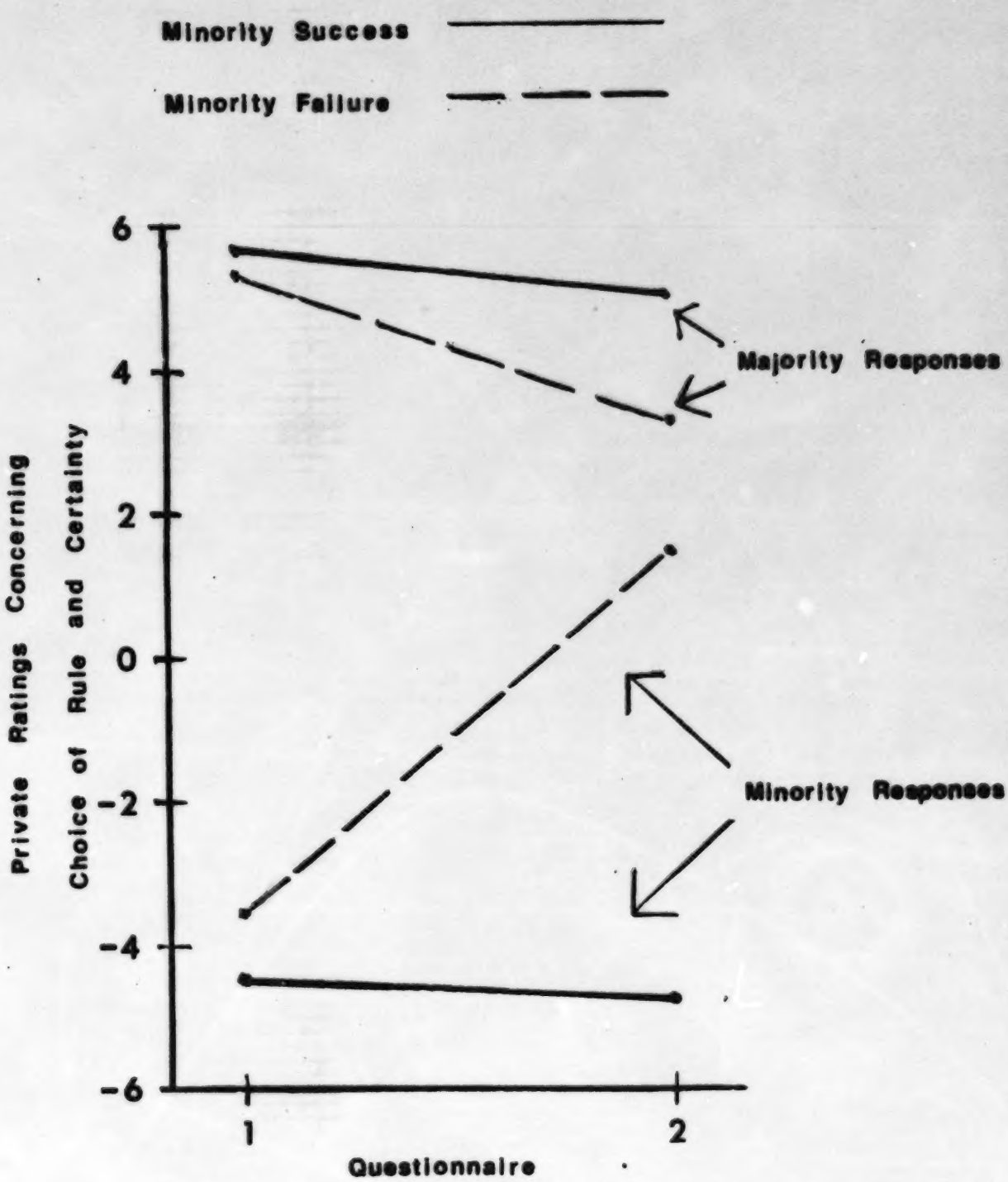

Figure 2. Change in private responses of majority and minority from questionnaire 1 to questionnaire 2.